REMARKS/ARGUMENTS

Reconsideration of the application is requested.

Claims 1-4 and 6-35 remain in the application. Claims 20-35 have been withdrawn. Claim 5 has been cancelled.

In the section entitled "Claim Rejections - 35 USC § 103" on pages 2-4 of the above-mentioned Office action, claims 1-4, 7-9, and 11-19 have been rejected as being unpatentable over Barret et al. (US Pat. No. 5,780,895) in view of Nandakumar et al. (US Pat. No. 5,296,725) under 35 U.S.C. § 103(a); claims 6 and 10 have been rejected as being unpatentable over Barret et al., Nandakumar et al. and further in view of Liao et al. (US Pat. No. 6,359,309) under 35 U.S.C. § 103(a).

As will be explained below, it is believed that the claims were patentable over the cited art in their original form and the claims have, therefore, not been amended to overcome the references.

Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful.

Claim 1 calls for, inter alia:

> a region of the second conductivity type being incorporated into said substrate, reaching to said first side, and electrically connecting to said second gate of said further MOS cells, said region having a potential floating relative to the potential of the first and second source regions of said MOS cells.

An important aspect of a vertical semiconductor component according to claim 1 of the instant application is that there is a semiconductor zone of a second conductivity type in a substrate of a first conductivity type, which is connected to a gate connection of a transistor cell. As can be seen in Fig. 2 of the instant application, which shows a cross-section of a vertical semiconductor, a semiconductor zone (11, 11') of a second conductivity type (p-doped) is disposed in a substrate (1) of a first conductivity type (n-doped) and the semiconductor zone (11, 11') of the second conductivity type is electrically connected to gate connections (7') of a transistor cell (SU).

Neither Barret et al. nor Nandakumar et al. disclose such a device with a semiconductor zone doped complementarily to a semiconductor substrate and connected to a gate electrode of a transistor cell.

The Examiner has stated in the section entitled "Response to Arguments" on page 4 of the Office action that Fig. 3 of

Nandakumar et al. shows a component in which a semiconductor zone of a second conductivity type, which is disposed in a semiconductor substrate, contacts a gate electrode. Applicants disagree with the Examiner's opinion for the following reasons.

Fig. 3 of Nandakumar et al. discloses a semiconductor component with a semiconductor substrate 16 of a first conductivity type (weakly n-doped) in which a semiconductor zone 33 of a second conductivity (p-doped) is disposed. This semiconductor zone 33 is located between transistor cells, which have p-doped base zones 34, 56 and n-doped source zones 40, 50, respectively. Gate electrodes 38, 46, 54, which are disposed above the semiconductor substrate, are insulated against the semiconductor body through insulating layers 37, 45, 53 (see column 8, line 12, lines 19-20, and line 44).

In contrast to the Examiner's opinion, no gate electrodes 38, 46, 54 can be connected to the semiconductor zone 33 of the second conductivity type due to the insulating layers. A contact 55, which contacts the semiconductor zone 33, is not connected to the gate potential V_{GATE} (see Fig. 3 and column 8, lines 46-47, the semiconductor zone 33 is connected to the cathode of the component by the contact 55).

Liao et al. also do not disclose such a component according to the invention of the instant application in which a semiconductor zone is doped complementarily to the semiconductor substrate and is connected to a gate electrode of the component. As can be seen from Fig. 3 of Liao et al., the gate electrode 5 is completely insulated against the semiconductor body (with semiconductor zones 1, 2, 3, 6). Further, in Liao et al. there is also no semiconductor zone doped complementarily to the semiconductor substrate 1 in addition to the body zones 6 of the transistor cells.

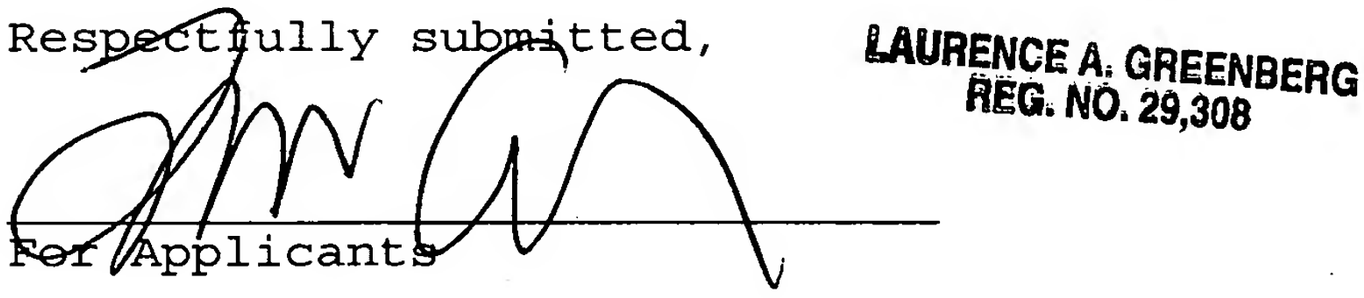
It is accordingly believed to be clear that none of the references, whether taken alone or in any combination, either show or suggest the features of claim 1. Claim 1 is, therefore, believed to be patentable over the art and since claims 2-4 and 6-19 are ultimately dependent on claim 1, they are believed to be patentable as well.

In view of the foregoing, reconsideration and allowance of claims 2-4 and 6-19 are solicited.

In the event the Examiner should still find any of the claims to be unpatentable, counsel would appreciate a telephone call so that, if possible, patentable language can be worked out.

If an extension of time for this paper is required, petition for extension is herewith made. Please charge any fees which might be due with respect to 37 CFR Sections 1.16 and 1.17 to the Deposit Account of Lerner and Greenberg, P.A., No. 12-1099.

Respectfully submitted,



For Applicants

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